

Appl. No.: 10/658,241
Reply to Office Action of May 24, 2005

Amendments to the Specification

Please replace the title on page 1, at lines 3 to 5 with the following rewritten title:

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"SYNTHESIS OF DIMERIC, TRIMERIC, TETRAMERIC, PENTAMERIC, AND HIGHER OLIGOMERIC EPICATECHIN-DERIVED PROCYANIDINS HAVING 4 β -8-INTERFLAVAN 4,8-INTERFLAVAN LINKAGES AND THEIR USE TO INHIBIT CANCER CELL GROWTH THROUGH CELL CYCLE ARREST."

Please replace the paragraph beginning at page 2, line 3, with the following rewritten paragraph:

— Two primary methods for oxidative functionalization are taught in the literature.

See Betts, M.J. et al., *J. Chem. Soc., C*, 1969, 1178 and Steenkamp, J.A., et al.,

Tetrahedron Lett., 1985, 3045-3048. In the older method, protected (+)-catechin was treated with lead tetraacetate (LTA) in benzene to produce the 4 β -acetoxyl derivative which was then successfully hydrolyzed to the 3,4-diol. Flavan-3,4-diols flavan-3,4-diols are incipient electrophiles in the biomimetic synthesis of procyanidins. However, flavan-3,4-diols flavan-3,4-diols, which have an oxygen functionality at the C-4 position are not available from natural sources and have to be synthesized. Oxidative functionalization of the prochiral benzylic position was used in the synthesis of procyanidins. The major drawback of this reaction was a low yield (30-36%) of the acetate during the LTA oxidation. The more recent method of oxidatively functionalizing the C-4 position relies on the use of 2,3-dichloro-5,6-dicyano-1,4-benzoquinone (DDQ). In this method, the protected monomer was treated with DDQ in methanol. This allows introduction of a methoxy group at the C-4 position in a stereospecific manner. The yield is was about 40-50%. —

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Please replace the title beginning at page 6, lines 1-2 with the following rewritten title:

-- A. Chain Extension of Protected Epicatechin Dimers and Trimers Monomer and Dimer Mediated by Acidic Clay. --

Please replace the title at page 10, lines 4-6 with the following rewritten title:

-- C. Cross Coupling of 3, 5, 7, 3', 4'-Protected Monomers Having C-4-(2-Benzothiazolyl)thio Groups and of A 3, 5, 7, 3', 4'-Protected Oligomer Having a A C-4-(2-Benzothiazolyl)thio Group and a A 3, 5, 7, 3', 4'-Protected Oligomer. --

R.S. - entd
10/26/05